

IMMUNIZATION IN PREGNANCY

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VACCINATION

S IN

PREGNANCY

WHAT IS VACCINE?????????

- *A vaccine is a substance that is introduced into the body to prevent Infection or a certain pathogen*
- *The vaccines are prepared from inactivated, live attenuated , modified or mutant forms of the causative agents.*

OBJECTIVE

- *To induce a state of immunity in the patient so that confrontation with offending organism can be successful in protecting the host.*



VACCINES:

HARMFUL or **HELPFUL?**

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**Adult immunization rates have fallen short of national goals, partly because of misconceptions about the safety and benefits of current vaccines.*



- *The danger of these misconceptions is magnified during pregnancy, when:*
 1. *Concerned physicians are hesitant to administer vaccines and*
 2. *Patients are reluctant to accept them.*

- *The administration of vaccines during pregnancy poses a number of concerns about the risk of transmitting a virus to a developing fetus.*



□ *The risk of transmitting a virus to a developing fetus is primarily*

Theoretical



○ *The danger of these misconceptions is magnified during pregnancy, when:*

- 1. Concerned physicians are hesitant to administer vaccines and*
- 2. Patients are reluctant to accept them.*



○ *Theoretic risks of vaccination must be weighed against the risks of the disease to mother and fetus.*



MAJOR CONTENT OF VACCINES

1. *Toxoids*
2. *Inactivated vaccines.*
3. *Attenuated vaccines*
4. *Subunit vaccines*
5. *Hyper immune globulins.*

+ *Routine vaccines that generally are safe during pregnancy include-*

1. *Tetanus*
2. *Influenza*
3. *Hepatitis B*
4. *Meningococcal*
5. *Rabies*

SPECIAL CONSIDERATIONS

1. *Pneumococcal vaccine*
2. *Typhoid*
3. *Cholera*
4. *Hepatitis A*
5. *Yellow fever*
6. *Japanese encephalitis*
7. *Polio*



⌘ *Vaccines that are contraindicated **live attenuated vaccine** include:*

- 1. Measles, Mumps, and Rubella;*
- 2. Varicella*
- 3. (BCG) bacille Calmette-Guérin*
- 4. Oral Polio*



If a live-virus vaccine is inadvertently given to a pregnant woman, or if a woman becomes pregnant within four weeks after vaccination, she should be counseled about potential effects on the fetus.



INFLUENZA



INFLUENZA

- *The influenza vaccine is a killed virus preparation with an annually adjusted antigenic makeup.*



INFLUENZA

- *Women in their second or third trimesters have higher morbidity, from influenza infection.*
- *Immunization should be avoided in most patients during the first trimester to avoid a coincidental association with spontaneous abortion, which is common in the first trimester.*

RABIES





○ *Three forms of inactivated rabies vaccines are available, all considered equally safe and efficacious*



PRE-EXPOSURE PROPHYLAXIS

- *Indications for pre-exposure immunization depend on the likelihood of exposure.*
- *It may be considered in animal workers and travelers to enzootic areas who anticipate animal exposure.*
- *3 intramuscular 0.1ml dose of cell-culture-based vaccine given on days 0, 7 and 21 or 28*



TETANUS



❁ *Tetanus toxoid is
routinely recommended
for susceptible
pregnant women.*



- *While no evidence exists to prove that tetanus toxoid is teratogenic, waiting until the second trimester of pregnancy to administer toxoids is a reasonable precaution, minimizing any concern about the theoretic possibility of such reactions.*



WHO NEEDS THE TETANUS VACCINE?

- *Previously vaccinated pregnant women who have not received a Td vaccination within the past 3 years should receive a booster dose.*



WHO NEEDS THE TETANUS AND DIPHTHERIA VACCINE?

□ *According to CDC guidelines :*

1ST dose between 16 -20 weeks &

2nd dose after 4 – 6 weeks .


Previously vaccinated pregnant women who have not received a Td vaccination within the past 3 years should receive a booster dose.

HEPATITIS B




HEPATITIS B

Risk factors for a pregnant woman include:

- 1. Having multiple sexual partners,*
 - 2. Abusing intravenous drugs,*
 - 3. Having occupational exposure*
 - 4. Being a household contact of acutely infected persons or persons with a chronic carrier state.*
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HEPATITIS B

- *Because it contains noninfectious hepatitis B surface antigen particles and it cause no risk to the fetus, neither pregnancy nor lactation is a contraindication to vaccination.*
- 

- *20mcg is administered at 0, 1 and 6 months as an intramuscular injection in the deltoid*
- *Antibody titres rise 20 to 30% after the first dose, 75 to 80% after 2nd dose and 90 to 95% after 3rd dose.*



HEPATITIS A

- A formaldehyde inactivated vaccine prepared from HAV grown in Diploid cells.
- 1ml im at 0,6 months
- A vaccination is effective for 10 years
- Advised mainly in persons entering endemic areas with HAV Infection.



COMBINED VACCINATION FOR HEPATITIS A AND B INFECTIONS.

Now a combined vaccine is available for
prevention of Hepatitis A and B

Available as

TWINRIX (GSK)


0.5ml im in 3 doses of 0,1,6months.



OTHER VACCINATIONS



MENINGOCOCCAL

- *Vaccination may benefit travelers to areas in which N. meningitidis is endemic or epidemic*
 - *3 types of vaccines-(polysachharide/protein/conjugate base*
 - *Only polysachharide vaccine safe in pregnancy*
 - *85% efficacy*
 - *0.5ml,im,single dose.*
 - *Offers protection for 3 years*
- 

PNEUMOCOCCAL VACCINE

- A polyvalent polysaccharide containing capsular antigen with 23 Sero types
- Gives 80 -90 % protection
- Used in
 - Dysfunctional spleen
 - Sickle cell diseases,
 - Chronic diseases of Liver, lungs, heart,
 - Renal failure.
 - HIV infection
- 0.5ml im single dose.



TYPHOID

- 3 types of vaccines are available-
 - 1) Vi polysaccharide vaccine-im
 - 2) Ty21a-oral
 - 3) Inactivated vaccine
- Only inactivated vaccine can be given in pregnancy
- 0.5ml, subcutaneous, 6 weeks apart
- ACOG recommends vaccine only when-
 - 1) Travelling to endemic area
 - 2) Close contact



YELLOW FEVER

- Inactivated vaccine
- 0.5ml,im,single dose.
- Offers life long immunity.
- 99% efficacy.
- ACOG recommends vaccine only in people travelling to endemic areas.



JAPANESE ENCEPHALITIS

- A vero cell derived inactivated vaccine of SA14-14-2 strain-

0.5ml,im,2 doses 4weeks apart

75%efficacy

Offers protection for 1 year

- A vero cell derived vaccine of beijing strain-

0.5ml,im,3 doses 4 weeks apart

95% efficacy.offers protection for 3 years



CHOLERA

- Killed bacterial vaccine
- 0.5ml,im,2 doses,4weeks apart
- ACOG recommends vaccine to be given in only in outbreaks.
- Risk to foetus is unknown
- Maternal vaccine increases IgA titres in breastmilk



POLIO



- *Inactivated vaccine(salk)*
- *0.5ml,im*
- *3 doses at 0,4,6 months*
- *Recommended only in outbreaks*



IMMUNOGLOBULINS

Recommended for post-exposure prophylaxis in -

- *Hepatitis A*
- *Hepatitis B*
- *Varicella zooster*
- *Tetanus*
- *Measles*
- *Rabies*



○ *Hepatitis A-*

-within 14 days

-0.02ml/kg body weight,single dose

-90% efficacy

○ *Hepatitis B-*

-Within 12hours of exposure

-0.05ml/kg body weight,repeat after 1 month

-For newborn-0.5 ml

-92% efficacy



- *Varicella zooster Ig-*
 - within 72hours*
 - 5ml,im,single dose*

- *Measles-*
 - Within 4 hours*
 - 0.25ml /kg body weight,im*

- *The benefits of immunization to the pregnant woman and her neonate usually outweigh the theoretic risks of adverse effects.*



- *Preconceptional immunization of pregnant women to prevent disease in the offspring is preferred to vaccination of pregnant women.*



- *Whether live or inactivated vaccines are used, vaccination of pregnant women should be considered on the basis of the risk of the vaccination vs. the benefits of protection in a particular circumstance.*



Thank you

